Problem of the Week: Week 3 (Summer 1): Year 8: Geometry: Constructions and scale drawings

- Construct similar shapes by enlargement, with or without coordinate grids
- Draw and measure line segments and angles in geometric figures, including interpreting scale drawings

Problem 1:

Hockey Pitch

The diagram below represents a hockey pitch.

a. Round each measurement to the nearest metre
b. Choose a scale to allow you to draw the hockey pitch to scale on an A4 piece of paper.
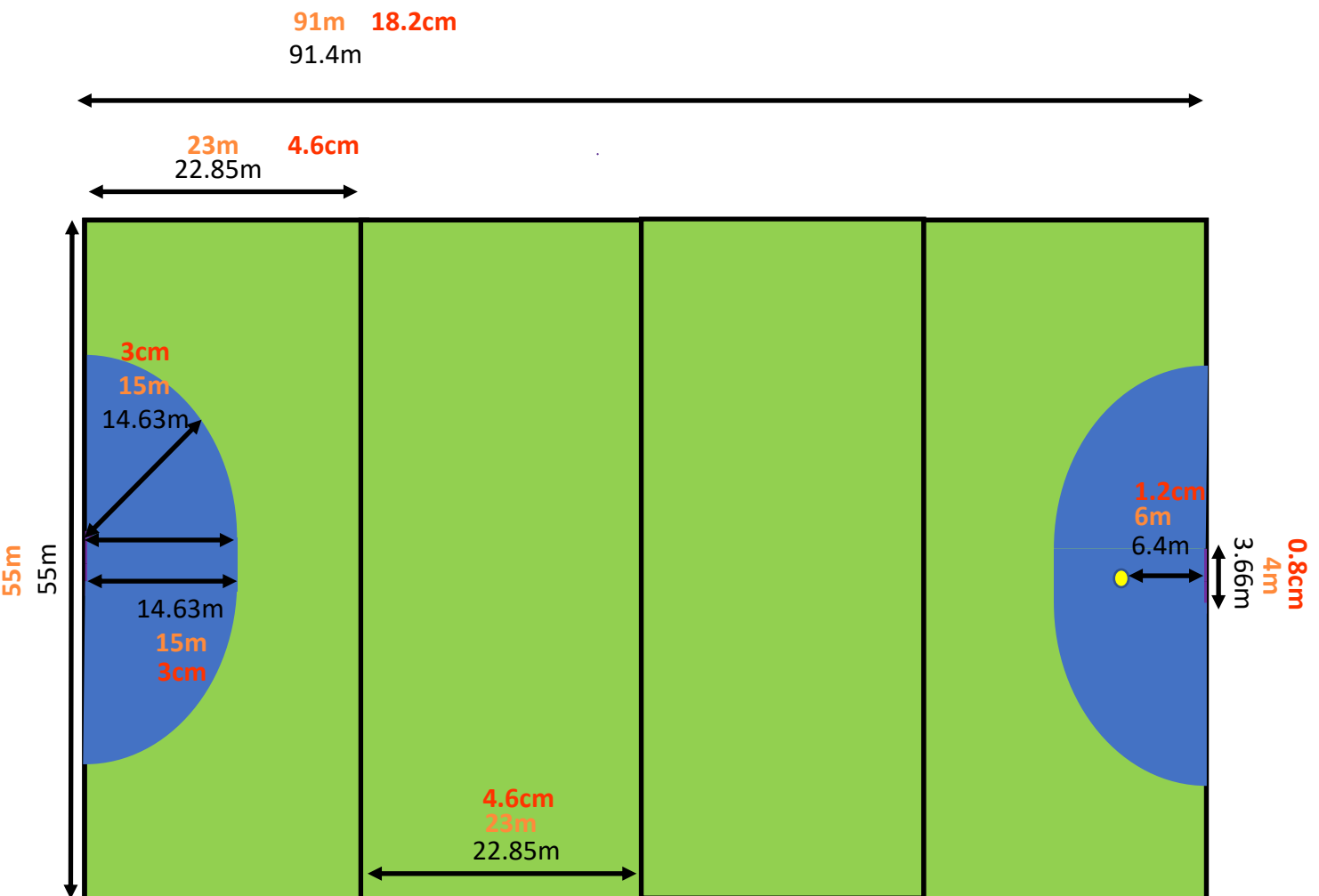
Sample solutions:

a. See **orange** figures on diagram
b. An appropriate scale would be 1cm to 5m
The figures on the diagram in **red** give the measurements that would be used for this scale

HIAS HOME LEARNING

www.hants.gov.uk

Problem 2:

Enlargement

The diagram below shows a right-angled triangle with vertices at (2,3), (2, 1) and (5,1)

1. Choose a centre of enlargement and enlarge the triangle by the following scale factors:
a. 2   b. 3   c. 0.5
    What happens if the centre of enlargement is inside the shape?

2. On a different set of axes draw a shape in a different quadrant, choose a centre of enlargement and enlarge your shape by the following scale factors:
    a. 2   b. 3   c. 0.5

3. On a plain piece of paper draw a car / house / hexagon. Choose a centre of enlargement and using a scale factor of one half, draw your shape when this enlargement has been applied.

    Sample solutions:
    -   The solution below is created using a centre of enlargement (1,2)
    -   The black triangle is the enlargement by a scale factor 2
    -   The blue triangle is the enlargement by a scale factor 3
    -   The green triangle is the enlargement by a scale factor 0.5

When the centre of enlargement is inside the shape the resulting image looks like a cobweb, see the second diagram below.

www.hants.gov.uk